

REMARKS

In response to the Office Action, please consider the following remarks. Claims 1-13 are currently pending in the application. Applicant respectfully requests the reconsideration of the application in light of the remarks presented herein.

The rejections under § 102

Claims 1 was rejected as being anticipated by Kuo US Patent No. 4,428,078 (Kuo). Claims 2-3, 5-9, and 11 were rejected also rejected as being anticipated by Kuo. Applicant respectfully traverses these rejections for at least the reasons set forth below.

The rejections under § 103

Claims 4, 10, 12, and 13 were variously rejected as being unpatentable over Kuo in view of Engellenner, Needle et al. (Needle), Abbey, and Schimmeyer et al. (Schimmeyer), respectively. Applicant respectfully traverses these rejections for at least the reasons set forth below.

Cited Art

Kuo teaches a multi-turn pick up loop for electromagnetically coupling a low frequency signal and a radio frequency signal for utilization by a seat group of receivers. The low frequency signal coupled to a transmission line powers the receiver while the radio frequency signal coupled to the transmission line provides entertainment information to the receiver. The simultaneous receipt of the low frequency and radio frequency energy from the transmission line is distinguished from the prior art to apparently indicate novelty by this feature. One of the parameters that determines the amount of coupled power is the distance between the pick up loop and the transmission line, the pick up loops being disposed in close proximity to the transmission lines, the pair of transmission lines being conductors.

The Cited Art Distinguished

In contrast to Kuo, claim 1 of the present invention teaches the following four step process:

- 1 – generating a radio frequency signal;
- 2 – feeding said radio frequency signal to a conductor; said conductor generally being within a structure;
- 3 – creating a quasi-static non-propagating electromagnetic field within said structure; and
- 4 – using said electromagnetic field to convey said radio frequency signal to a receiver generally located within said structure.

The process of the present invention allows for wirelessly connecting radio frequency devices within a quasi-static electromagnetic field. By introducing the radio frequency signal to conductors within a structure, the structure itself becomes an exciter for the system and serves as a medium for wirelessly connecting devices within the volume. The field is not propagating in the normal sense and is accordingly not affected by non-metallic walls or personnel.

Kuo is a wireless entertainment system, specifically designed for passenger aircrafts, that utilizes the simultaneous transmission of low frequency signals for power supply rectification and radio frequency signals for information demodulation between transmission lines parallel with seat tracks in the aircraft passenger compartment and seat leg mounted pick up loops. A low frequency signal is coupled to a transmission line to power the receiver, while a radio frequency signal is coupled to the transmission line to provide entertainment information to the receiver. The application highlights the simultaneous receipt of radio frequency and low frequency energy. A multi-turn pick up loop is utilized to electromagnetically couple the low frequency and radio frequency signals for utilization by a seat group of receivers. The receivers are specifically located at a particular location in close proximity to the transmission lines that comprise a pair of conductors.

In contrast, the present invention utilizes an electromagnetic field to create a region within an enclosure, the field being used to connect many different devices without wires or interference to other radio devices. Note, Kuo asserts an advantage of its close coupling between transmission lines and individual seat group pick up loops is that less electromagnetic interference occurs to other avionics aboard the aircraft than would occur by the transmission of the radio frequency signal throughout the cabin to individual receiver antennas. The present invention requires no such close coupling, but rather creates a region that allows for wireless connection without interference to other conventional radio devices. A variety of wireless devices can be utilized within the volume, regardless of how close their proximity to the conductor, as long as the devices are within the excited volume. Note, the receiver is “generally” located within the structure.

Moreover, Kuo fails to disclose or suggest “creating a quasi-static non propagating electromagnetic field.” Rather, Kuo discloses a traditional transmitter/receiver system with signals traveling via propagating waves, hence the concern expressed in Kuo about interference with other avionic devices in the volume of the airplane. In order to minimize interference with these avionics devices, Kuo suggests allocating an r.f. frequency within a spectrum not utilized by avionics equipment. Clearly, Kuo teaches propagating waves. The present invention, quite differently, teaches non-propagating waves and a quasi-static electromagnetic field is produced.

Further, Kuo fails to teach utilizing the existing conductive elements of an enclosure to achieve connectivity. Rather, Kuo teaches transmission lines comprising a pair of spaced conductors. The transmission lines are installed along passageways. The present invention, on the other hand, utilizes the conductive elements of an enclosure to create a quasi-static electromagnetic field, which does not require installing spaced conductors, nor does it require a closely coupled “pick up loop.”

Applicant therefore respectfully submits that claim 1 is allowable over the cited art and respectfully requests that the Examiner withdraw rejections of claim 1 and all claims depending therefrom.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reexamination of claims 1-13 and submits that these claims are in condition for allowance. Accordingly, a notice of allowance is respectfully requested.

This response is being filed within the shortened statutory period set by the Examiner for response and, accordingly, it is not accompanied by a Petition for extension of time, or with a fee therefor. In the unlikely event the Petition or fee may become separated from this paper, or if the Examiner may determine that an extension of time or fee[s] may be necessary in connection with the filing of this paper, the Assistant Commissioner is hereby authorized to charge any such fees, or to credit overpayment to Deposit Account No. 02-3964 (60607.300101).

If the Examiner believes that a conference would facilitate prosecution of this application, the Examiner is invited to telephone Applicant's representative, undersigned, at the number set out below.

Respectfully submitted,
OPPENHEIMER WOLFF & DONNELLY LLP



Stefanie Howell
Registration No. 45,929

P.O. Box 10356
Palo Alto, CA 94303
Telephone: (650) 320-4357